CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER No. R2-2007-0020

UPDATED WASTE DISCHARGE REQUIREMENTS AND RESCISSION OF ORDER NO. R2-2003-0111 FOR:

U.S. ARMY CORPS OF ENGINEERS, SAN FRANCISCO DISTRICT
MAINTENANCE DREDGING PROGRAM, 2007 THROUGH 2009

The California Regional Water Quality Control Board, San Francisco Bay Region (herein called "the Water Board"), **finds that**:

Purpose

1. These Waste Discharge Requirements apply to the U.S. Army Corps of Engineers, San Francisco District (hereinafter "USACE") for maintenance dredging of federal navigation channels in the San Francisco Bay Area, and for disposal of dredged material created by these activities, over a period of approximately three years.

Scope

2. The USACE maintains the navigability of federally authorized channels at the entrance to and in San Francisco Bay. The USACE removes accumulated sediment (primarily silt and clay) by hydraulic (e.g. self-propelled hopper; hydraulic cutter head) or mechanical (e.g. clamshell) dredges, and typically disposes of the dredged material by either self-propelled hopper, dump scow, or by use of a pipeline to transport material to beneficial reuse sites.

3. This Order applies only to maintenance dredging, which is performed on a periodic basis to previously authorized depths and removes recently deposited materials. This Order does not apply to "new work" dredging, which removes material to new authorized depths and may involve dredging consolidated materials or historically contaminated materials.

4. For the approximately three-year period covered by this Order, the USACE proposes to perform maintenance dredging at several locations in the Bay Area (Figure 1). The total volume of material proposed for dredging is approximately 1,725,000 cubic yards (cy) at the San Francisco Main Ship Channel and approximately 7,650,000 cy within San Francisco Bay. The USACE plans to use an array of options for disposal of the dredged material, described later in this Order.

Long Term Management Strategy for Disposal of Dredged Material

5. Material dredged within San Francisco Bay is typically disposed of in the Bay, in the ocean, or it may be beneficially reused for purposes such as wetland creation, levee maintenance, or construction fill. Disposal in the Bay occurs at four designated aquatic disposal sites (Figure 2): the Alcatraz Island Disposal Site (SF-11), the San Pablo Bay Disposal Site (SF-10), the Carquinez Strait Disposal Site (SF-09), and the Suisun Bay Disposal Site (SF-16). Ocean

disposal for Bay dredged material occurs at the San Francisco Deep Ocean Disposal Site (SF-DODS), about 50 miles offshore of the Golden Gate. Existing beneficial reuse sites include: several area landfills (dredged material is used as alternative daily cover), the Montezuma Wetlands Restoration Project (regulated by Water Board Order No. 00-061), the Hamilton Wetland Restoration Project (regulated by Board Order No. R2-2005-0034), and the Van Sickle Island Levee Rehabilitation Project (currently under permit application review for widening the levee, which would require 500,000 to 1,000,000 cy of additional fill material). Dredged material from the San Francisco Main Ship Channel is disposed of outside San Francisco Bay at the San Francisco Bar Disposal Site (SF-08). The USACE is also conducting beneficial reuse pilot demonstration studies to determine whether sand from the Main Ship Channel placed nearshore, approximately 3/4 miles offshore from Ocean Beach, San Francisco, can successfully help mitigate ongoing shoreline erosion in the area south of Sloat Blvd. that threatens municipal infrastructure including segments of the Great Highway.

6. The Water Board and the USACE are participants in the Long Term Management Strategy (LTMS) for the Placement of Dredged Material in the San Francisco Bay Region along with the U. S. EPA, the San Francisco Bay Conservation and Development Commission and the State Water Resources Control Board. These LTMS agencies evaluated alternative management options for disposal and reuse of dredged sediment over a fifty-year planning horizon in a Policy Environmental Impact Statement/Programmatic Environmental Impact Report (EIS/EIR) that was completed in October 1998. The EIS/EIR indicated that dredged material disposal may have adverse impacts on the beneficial uses of the waters of San Francisco Bay and that in-Bay disposal should be reduced from historical levels.

7. The LTMS agencies have determined that the preferred alternative is to reduce disposal in the Bay to a long-term average of 1.25 million cubic yards per year. This goal can be accomplished by disposing of more dredged material at SF-DODS and beneficially reusing dredged material. The Water Board finds that it is in the public interest to encourage ocean disposal and beneficial reuse of suitable dredged materials to reduce the volume of disposal in San Francisco Bay.

8. Implementation of the LTMS long-term goal will occur in a phased program, as described in the LTMS Management Plan, approved in July 2001 by the LTMS Executive Committee, whose members include the Water Board Chair and the State Board Water Resources Control Board Executive Director. Initial efforts to reduce in-Bay disposal of dredged material will be voluntary on the part of all Bay-area dredging project proponents. Bay-area dredgers have been assigned annual allocations of in-Bay disposal volumes that will decrease every three years until the long-term goal is reached in 2012. During the voluntary phase of LTMS implementation, allocations will serve as targets. If voluntary efforts do not produce progress to the goal of reduced in-Bay disposal, the goal will be achieved through a mandatory (regulatory) approach where dredging project proponents will not be authorized to dispose of amounts of dredged material in

San Francisco Bay in excess of their allocated volumes.

The USACE is the largest dredger in the Bay Area. Efforts by the USACE to reduce in-Bay disposal will be critical to successful implementation of the LTMS. In keeping with the LTMS targets and the associated volume step-down plan, the USACE's average in-Bay disposal volume for 2007 through 2009 shall be 1.1 million cy per year. This Order supports USACE's in-Bay disposal average of 1.1 million cy per year, for a total of 3.3 million cy by December 2009. Further action by the Water Board will be required for in-Bay disposal in excess of this quantity.

9. The USACE has successfully found ways to reduce in-Bay disposal, even prior to the release of the LTMS Management Plan. In 1994, the USACE placed approximately 120,000 cy of material dredged from the Suisun Bay Channel and New York Slough at the Jersey Island Levee Reinforcement Demonstration Project. Since 1997, the USACE has disposed of maintenance and new work material from both Oakland Harbor and Richmond Harbor at SF-DODS. Between 1998 and 2004, the USACE placed approximately 529,000 cy of material, most of it dredged from Suisun Bay Channel, on Winter Island as part of a levee rehabilitation project. In 2006, the USACE placed approximately 250,000 cy of maintenance material dredged from Oakland Harbor at the Montezuma Wetland Restoration Project.

Beneficial Reuse of Dredged Material

10. The USACE has conducted studies that show that dredged material from the Suisun Bay Channel and New York Slough is primarily sand that has readily identifiable beneficial uses and which typically has low pollutant burdens. The Water Board encourages the USACE to continue to find beneficial uses for clean, sandy dredged material from these locations.

11. The USACE has been supportive of habitat restoration using dredged material. The USACE, in conjunction with the local project sponsor, the California State Coastal Conservancy, is in the process of designing and constructing the Hamilton Wetland Restoration Project (HWRP) at the former Hamilton Army Airfield, which requires beneficial reuse of up to 10.6 million cy of dredged material over the next 8 years to support tidal and seasonal marsh restoration. The construction and operation of an offloader to transfer material from the dredge barges to the HWRP is essential to the success of beneficial reuse at the HWRP during the three-year period covered by this Order. The offloader will be located in San Pablo Bay approximately five miles offshore where the Bay is sufficiently deep for navigation. The offloader is a modified hydraulic dredge which has the capability of pumping water from the Bay, mixing it with dredged sediment from incoming dredge barge scows, and pumping the resulting slurry through approximately five miles of pipeline to the HWRP. The offloader is currently under contract and is expected to be operational by fall 2007.

In addition, in 2007 and/or 2008, the USACE plans to place approximately 325,000 cy of material dredged from Redwood City Harbor on Inner Bair Island, which is part of the 2,600-acre Bair Island tidal wetland complex. The U.S. Fish

and Wildlife Service restore and manage the tidal wetlands as part of the Don Edwards San Francisco Bay National Wildlife Refuge. Dredged material from Redwood City Harbor will be used to raise the marsh plain elevation of Inner Bair Island to expedite establishment of emergent tidal salt marsh and to raise the elevation of the adjacent upland San Carlos Airport Safety Zone to limit the potential for increased bird strike hazards to airplane traffic.

Project Details

12. The USACE's proposed maintenance dredging for 2007 through 2009 includes in-Bay and ocean disposal and beneficial reuse projects as shown in Table 1a. The USACE is proposing to take an average of 19% of the maintenance dredging material from within San Francisco Bay to the ocean, 67% to upland sites and 14% to in-Bay disposal sites over a three-year period (Table 1b). This is consistent with the voluntary approach to Phase I of the LTMS Management Plan.

13. Because of variability in natural processes governing sedimentation and in the USACE funding process, there may be changes in the projects, volumes, and disposal locations proposed in Table 1. This Order requires that the USACE notify the Executive Officer in writing of such changes. Increased volumes, addition of new projects, and changes in disposal locations may necessitate Board actions.

14. Table 1 includes alternate disposal locations for many of the projects. The USACE will make every effort to use the preferred disposal locations, but may be forced by funding or logistical constraints to use alternate locations. Table 1 also includes "expected volumes" and "maximum volumes" for each project. Expected volumes are based on averages of recent dredging volumes for each project. Maximum volumes are an estimate, based on historic dredging volumes and potential variability in sedimentation patterns, of the maximum amount that might be dredged from each project area. The maximum volumes are presented to show the upper end of the potential range of dredging volumes for individual projects. Overall, the expected volumes in Table 1 will be overestimates in some cases, and underestimates in others, so that overall, the total volume dredged for all projects within San Francisco Bay should be approximately 7.7 million cy, with an additional 1.7 million cy of material dredged from the Main Ship Channel and disposed of at SF-08 or the Ocean Beach nourishment demonstration site.

Table 1. Calendar Year 2007-2009 Federal Maintenance Dredging Projects

Projects	Estimated Volume (cy)	Maximum Volume (cy)	Preferred Disposal Site	Alternate Disposal Sites
Deep Draft Channels[1]				
Oakland Inner and Outer Harbor[2]	1,500,000	2,100,000	HWRP/MWRP/SF-DODS [3]	SF-DODS
Richmond Inner Harbor	1,350,000	2,250,000	SF-DODS in 2007, HWRP in 2008-09	SF-DODS in 2008-09
Richmond Outer Harbor	900,000	2,025,000	SF-11 in 2007, HWRP in 2008-09	SF-DODS, SF-11, SF-10
Suisun Bay Channel & New York Slough	525,000	900,000	HWRP	SF-16, SF-9
Pinole Shoal Channel	525,000	900,000	SF-10 in 2007 & 2009 HWRP in 2008[4]	SF-10, SF-9
Redwood City Harbor	675,000	1,100,000	Bair Island in 2007, HWRP in 2008-09	SF-11, SF-10
S.F. Main Ship Channel	1,725,000	2,775,000	Ocean Beach Nourishment	SF-08
Shallow Draft Channels[5]				
Napa River (upper and lower reaches)	625,000	775,000	Upland (site provided by Napa County Flood Control District)	NA
Petaluma Across the Flats (ATF)	525,000	650,000	HWRP (material can be hydraulically dredged and pumped via pipeline, bypassing offloader)	NA
Petaluma River (upper reaches)	350,000	450,000	Upland (site provided by City of Petaluma)	NA
San Rafael Creek ATF	225,000	350,000	HWRP	SF-10, SF-11
San Rafael Inner Canal	200,000	250,000	HWRP	SF-10, SF-11
San Leandro Marina	250,000	350,000	Upland (City of San Leandro-sponsored site)	NA
Total (excluding SF Main Ship Channel)	**7,650,000**	**12,100,000**		

Assumptions:

For projects with preferred disposal at HWRP, the USACE estimates that at least 70% of the material will be placed there (starting in fall 2007 if an offloader is operational), with the remainder disposed at the alternate aquatic

disposal sites. The USACE will try to maximize placement of material at HWRP, but due to potential problems with the offloader (e.g. breakdowns, bottlenecks, etc.), some of the material may need to be diverted to the alternate aquatic disposal sites.

Footnotes:
[1]-30 ft MLLW or deeper & dredged annually.
[2] Currently being deepened from -42 to -50 ft MLLW under the Oakland Harbor Navigation Improvement Project
[3] Newly shoaled material will continue to be dredged along with deepening material, with placement at the HWRP, Montezuma Wetlands Restoration Project (MWRP), and/or SF-DODS. Separate maintenance dredging in Oakland Harbor Channel is not anticipated in 2007, but may occur in 2008 and 2009.
[4]Because the USACE hopper dredge Essayons will not be available in 2008 due to repairs/overhaul, the USACE plans to contract with a private dredging company to remove material from Pinole Shoal via clam shell dredge and take it to the HWRP offloader.
[5]-15 ft MLLW or shallower & dredged every three years or less frequently.

Table 2. Summary of expected dredging volumes and disposal locations in San Francisco Bay

	Dredging Volume (cy)			% of Total Volume:			
	2007	2008	2009	2007	2008	2009	Average
In-Bay	527,500	285,000	280,000	14	13	16	14
Ocean (SF-DODS)	700,000	375,000	375,000	19	17	21	19
Beneficial Reuse	2,447,500	1,540,000	1,120,000	67	70	63	67
Total	3,675,000	2,200,000	1,775,000	100	100	100	100

Review of Dredging Episodes

15. The Water Board participates in the Dredged Material Management Office (DMMO); a working group with representatives of the state and federal agencies with regulatory authority over Bay Area dredging projects. Staff representatives of the Water Board, the USACE, the U.S. Environmental Protection Agency, the San Francisco Bay Conservation and Development Commission, and the California State Lands Commission meet regularly to jointly review dredging projects and make consensus-based recommendations to their respective agencies about permit conditions and the suitability of sediments for proposed disposal sites. Representatives from the California Department of Fish and Game and from the National Marine Fisheries Service also participate in the DMMO in an advisory capacity. Each DMMO agency retains its independent decision-making authority, but the group has significantly reduced project review time by concurrent consideration of projects. The USACE handles the logistics for the operation of the DMMO.

    This Order requires that dredging episodes carried out under this Order will be reviewed by the DMMO for a recommendation on the suitability for disposal or reuse of the dredged material. Each dredging episode must be approved in writing by Water Board staff.

Emergency Dredging

16. The USACE is required to ensure that all navigation channels are dredged to a safe depth. If an area is found to be an unacceptable hazard to life or navigation,

or threatens to cause an immediate and unforeseen significant economic hardship if corrective action is not taken quickly, the USACE may carry out dredging on a limited basis even though that project is not scheduled for dredging. In such cases, an expedited testing and approval process is often necessary. The USACE does not anticipate performing more than three emergency dredging episodes consisting of less than 30,000 cy each per year. The Water Board recognizes the need for expedited review of emergency dredging episodes, and expects that the USACE will still follow the procedures outlined in Provisions 9 and 10 of this Order for written approval by the Executive Officer of emergency dredging episodes.

In atypical conditions, such as after an extraordinary storm event, a shoaling situation may be such an immediate hazard that even an expedited review process is not feasible. The Water Board recognizes that the USACE has the authority to remove the hazard without the Executive Officer's approval pursuant to this Order.

Barring and Knock-down Dredging

17. **Barring as part of a dredging episode:** The USACE plans to implement "barring", as a routine part of dredging episodes to smooth out high-spots as needed after dredging has occurred. This method involves using a tug to pull a weighted blade across the channel bottom. As the blade encounters material, it scrapes the material into the adjoining areas with deeper depressions, redistributing the shoaled material within the project area. Barring will be restricted to the channel footprint and the project depth, including the over dredge depth allowance. If barring were not utilized as part of dredging episodes, the vessel operator would likely have to dredge below project depth in certain areas in order to ensure safe navigation, resulting in an increased volume of material dredged and contributing to a decrease in overall efficiency.

Knock-down performed in lieu of dredging: Separate from barring which is implemented at end of dredging episodes, the USACE anticipates performing several "knock-down" events in lieu of conducting full dredging episodes. Knock-downs would use the same equipment and procedures as barring, but would apply to isolated shoals or high-spots rather than an entire channel. Knock-downs are most useful when time constraints may not allow for normal dredging, or when a shoal threatening navigation covers a small area of a project area that is otherwise at or below its permitted depth. Conducting separate knock-down operations is often more efficient than mobilizing dredging equipment and transporting the material to a disposal site. Knock-down events occurring separately from full dredging episodes, or in combination with a dredging episode occurring in a different location within the same channel, will be subject to the same environmental review and coordination with the DMMO as full dredging episodes. The volume of material above project design depth to be knocked down under these separate operations is not anticipated to exceed 15,000 cy per year in each deep draft channel. Each knock-down that is a stand-alone event

and not associated with a dredging episode must be approved by Water Board staff.

Management of the in-Bay Disposal Sites

18. The in-Bay disposal sites are operated as "dispersive" sites, that is, material disposed of at the sites should be dispersed by currents and tidal flows, and the sites should not accumulate material. The USACE is responsible for managing and monitoring the sites. The USACE manages the total volume, timing, and locations of disposal at the sites, and performs regular bathymetric surveys at the sites to determine whether dredged material is accumulating.

19. In the late 1980s, USACE surveys of the Alcatraz disposal site showed a drastic decline in depth and unexpected bottom topography ("mounding"). The USACE changed management practices at the Alcatraz site, directing disposal episodes to specific areas within the disposal site, and reducing the monthly allowable volume of disposal during winter months (USACE Public Notice No. 93-3). Table 2, below, shows the monthly and annual total volume targets for all dredgers currently in effect for the in-Bay disposal sites. This Order requires that the USACE continue to enforce these disposal volume targets, in order to minimize water quality impacts associated with in-Bay disposal of dredged material.

Table 3. Monthly and Annual Target Volumes in for 2007-2009

Designated Disposal Site	Monthly Target Volume (cy)	Annual Target Volume (cy)
Alcatraz Island (SF-11)		
October – April	400,000	NA
May – September	300,000	NA
Carquinez Strait (SF-9) – Any Month	1,000,000	NA
San Pablo Bay (SF-10) – Any Month	500,000	NA
Suisun Bay (SF-16)		200,000
Maximum Allowed for Sum Total of all Aquatic Disposal Sites in Any One Year		2.03 million

20. The USACE provides quarterly reports to Water Board staff in order to monitor compliance with the target volumes and to facilitate planning of dredging and disposal operations oversight. The USACE is currently developing a web-based data management system for the DMMO to improve access to and maintenance of sediment testing data, sediment disposal tracking data, and DMMO permit tracking. The disposal tracking portion of the database is intended to facilitate

easy generation of summary data, such as compliance with target volumes at in-Bay disposal sites. Once the disposal tracking portion of database is operational and accessible to all DMMO agency staff via the DMMO web site, it will no longer be necessary for the USACE to submit quarterly reports to Water Board staff. Until the DMMO database becomes functional, however, this Order requires that the USACE continue to submit quarterly reports to Water Board staff.

Impacts of Dredging and in-Bay Disposal

21. Bay-wide impacts of dredging and dredged material disposal activities have not been well quantified. In order to minimize potential impacts of these activities on threatened and endangered species, the California Department of Fish and Game, the National Marine Fisheries Service, and the U.S. Fish and Wildlife Service issued Biological Opinions on the LTMS EIS/EIR. The Opinions establish work windows, during which projects are authorized for incidental take under the Endangered Species Act. Dredging or disposal of dredged material proposed for times outside of work windows may be approved through a consultation process with the resource agencies. This Order requires that the USACE comply with the work windows contained in the Biological Opinions on the LTMS EIS/EIR or obtain written authorization from the resource agencies for work proposed outside of these windows.

22. Although several studies have been conducted on the impacts of dredged material disposal, formal management of the in-Bay disposal sites needs to be improved. Additional information is needed to assess the cumulative and long-term effects of dredging and dredged material disposal. Particular areas of focus should be: 1) fate of dredged material disposed at the currently authorized disposal sites, 2) evaluation of an appropriate initial mixing zone for dredged material disposal, 3) status of residual dredged material at the disposal sites (physical properties, size and extent of the Alcatraz mound, etc.), and 4) how the dredging and disposal process affects the bioavailability of chemicals that currently impair the beneficial uses of San Francisco Bay. The Water Board recognizes the need for more information about these concerns and therefore endorses a study-based approach to monitor the effects of dredging and dredged material disposal. In the absence of such information, the reduction of in-Bay disposal as described in the LTMS Management Plan is necessary to protect water quality in San Francisco Bay.

    In 2001 the Environmental Windows Work Group was established to identify and recommend study priorities to the LTMS Management Committee, in order to streamline the ESA consultation process with Federal (USFWS, NOAA Fisheries) and State (CDFG) resource agencies. The USACE has been an active participant in the Environmental Windows Work Group subcommittee on science/data gaps and has funded most of the LTMS scientific studies that have resulted from recommendations of this subcommittee, including: mercury methylation potential and management; disposal plume tracking and modeling; effects of dredged material plumes on herring eggs; and juvenile salmonid distribution in the San Francisco estuary. The Water Board encourages the USACE to continue to participate in this work group.

23. The Water Board has implemented the Regional Monitoring Program (RMP) since 1992. The RMP is a coordinated and comprehensive long-term monitoring program with the goal of monitoring water and sediment quality to provide the scientific foundation for managing and improving the health of the San Francisco Bay aquatic ecosystem. Additionally, the RMP provides for special and pilot studies of interest to program participants. The USACE is a participant in the RMP, and contributes to the program by funding monitoring of suspended sediments at an array on locations in the Bay, which is carried out by the United States Geological Survey. This monitoring has and will continue to improve understanding of sediment transport processes and create a comprehensive database for various numerical modeling efforts.

CEQA

24. The project is categorically exempt from the requirements of the California Environmental Quality Act pursuant to Title 14 of the California Code of Regulations, Section 15304(g). The Water Board has filed a Notice of Exemption for the project with the State Clearinghouse.

Basin Plan

25. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Water Board and approved by the State Water Resources Control Board, U.S. EPA, and the Office of Administrative Law where required. The latest version was effective as of December 22, 2006.

Beneficial Uses

26. The beneficial uses of San Francisco Bay in the vicinity of the dredging and disposal areas are:

    a. Fish migration and spawning
    b. Estuarine habitat
    c. Wildlife habitat
    d. Preservation of rare and endangered species
    e. Water contact and non-contact water recreation
    f. Shellfish harvesting
    g. Commercial and sport fishing
    h. Navigation
    i. Industrial process and service supply

Notification

27. The USACE and interested persons have been notified of the Water Board's intent to issue requirements for the USACE and have been provided with the opportunity to submit their written comments.

Violation of Order

28. Any violation of provisions of this Order is subject to administrative civil enforcement pursuant to the California Water Code. Failure to meet any condition of this Order may subject the USACE to civil penalty imposed by the Water Board to a maximum of $1000 per day of violation or $10 for each gallon of waste discharged in violation of this Order.

The Water Board, in a properly noticed public hearing on March 14, 2007, heard and considered all comments pertaining to the project.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder and to the provisions of the Federal Water Pollution Control Act, as amended, and regulations and guidelines adopted thereunder, that the USACE shall comply with the following:

A. RECEIVING WATER LIMITATIONS

1. The dredging and disposal activities shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

2. The discharge of waste shall not cause the following conditions to exist in waters of the State that cause a nuisance or adversely affect beneficial uses at any place:

    a. Floating, suspended, or deposited macroscopic particulate matter or foam;

    b. Aquatic growths;

    c. Significant alteration of temperature, turbidity, or apparent color beyond present natural background levels;

    d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

    e. Toxic or other deleterious substances in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

3. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

a. Dissolved	5.0 mg/l minimum downstream of the Carquinez Bridge, 7.0 mg/l minimum

Oxygen:	upstream of the Carquinez Bridge. When natural factors cause lesser concentrations, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.
b. Dissolved Sulfide:	0.1 mg/l maximum.
c. pH:	A variation of natural ambient pH by more than 0.5 pH units.
d. Un-ionized Ammonia:	0.025 mg/L as N, annual median; and 0.16 mg/L as N, maximum.
e. Salinity:	The project shall not increase total dissolved solids or salinity to adversely affect beneficial uses

4. The discharge shall not cause a violation of any applicable water quality objectives for receiving waters adopted by the Water Board and the State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Water Board will revise and modify this Order in accordance with such more stringent standards.

B. PROVISIONS

Project and Project Changes

1. This Order authorizes:

    a. At the San Francisco Bar Channel - Dredging of up to 2.8 million cubic yards and disposal of the dredged material at SF-08 or the Ocean Beach nourishment demonstration project.

    b. Within San Francisco Bay - Dredging of up to 12 million cy of dredged material and disposal of up to 5.4 million cubic yards at the in-Bay disposal sites (assuming maximum dredging volumes and least-preferred disposal options). Disposal of dredged material may also occur at the Deep Ocean Disposal Site, beyond the jurisdiction of the Water Board. Disposal of dredged material at beneficial reuse locations within the Water Board's jurisdiction is regulated through site-specific Water Board orders for each location.

2. The District Engineer shall inform the Executive Officer in writing of any changes to the project plan in Table 1a of this Order. The Executive Officer shall determine whether such a proposed change requires modification of the Waste Discharge Requirements issued herein, in which case the District Engineer shall submit a request for revised Waste Discharge Requirements for action by the

Board. Proposed changes that would require modification to this Order include but are not limited to any changes that may result in an overall increase in the amount of in-Bay disposal or an increased threat to water quality. The Executive Officer may approve minor project changes that do not require modification to this Order and which will not result in an increased threat to water quality.

Dredging and Disposal Operations

3. Dredging at each project location shall be limited to the project depth with no more than two feet of over-dredge allowance.

4. No overflow shall be discharged from any barge, with the exception of spillage incidental to clamshell dredge operations.

5. Return water overflow from hopper-type suction dredges shall be limited to no longer than 15 minutes at the dredge site during any one excavation action (cut).

6. Dredging shall not occur during the Pacific herring spawning season (December 1 through March 1) in spawning areas (Figure 3) unless otherwise authorized in writing by the California Department of Fish and Game.

7. Dredging and disposal activities shall be limited to the work windows set out by the California Department of Fish and Game, the National Marine Fisheries Service, and the U.S. Fish and Wildlife Service in their Biological Opinions on the LTMS, unless through a consultation process, the appropriate agencies provide written authorization to work outside these windows.

8. Discharges of dredged material shall comply with annual and seasonal volume target limits for disposal at in-Bay sites listed in Table 2 of this Order.

Episode approval

9. Individual dredging and disposal episodes, including knockdown events, shall not commence until authorized by Water Board staff following review by the DMMO. The review process for individual dredging episodes shall occur through the DMMO by the same process as is used for other Bay Area dredging projects. Project descriptions, requests for dredged material suitability determinations, and evaluations of disposal alternatives (see Provision 10, below) shall be reviewed by the DMMO. Submittals to the DMMO shall be made no later than one week prior to the meeting at which the project will be discussed or else the information will not be considered. The USACE shall follow applicable federal and state guidance on a tiered testing framework and on the preparation of reports.

10. For each dredging episode where in-Bay disposal is proposed, the USACE shall, as part of the episode approval process, submit to the DMMO an evaluation of alternative disposal sites pursuant to Section 404(b)(1) of the Clean Water Act. Evaluations shall include analyses of the feasibility of the following disposal options:

a. Habitat Restoration: The USACE shall evaluate the feasibility of placing dredged material at habitat restoration sites within the San Francisco Bay region and take dredged material to those sites where it is feasible. The USACE shall make good faith efforts to coordinate with habitat restoration projects that are seeking dredged material.

b. Levee Restoration: The USACE shall evaluate the feasibility of placing the dredged material in question at levee restoration sites within the San Francisco Bay region and take dredged material to those sites where it is feasible. The USACE shall make good faith efforts to coordinate with levee restoration projects that are seeking dredged material.

c. Beneficial Reuse and Rehandling Sites: The USACE shall evaluate the feasibility of placing the dredged material in question at beneficial reuse sites and dredged material rehandling sites within the San Francisco Bay region and take dredged material to those sites where it is feasible.

d. Ocean Disposal: The USACE shall evaluate the feasibility of placing the dredged material at SF-DODS.

e. Coordination with other USACE Projects: The USACE shall evaluate the feasibility of combining disposal of dredged material with that from other USACE projects using ocean disposal or beneficial reuse when both projects will occur at similar times or locations, or will be performed by the same contractor.

Beneficial Reuse Coordination

11. The USACE shall make good faith efforts to coordinate with and, if appropriate, to enter into agreement(s) with the state Department of Water Resources, the State Coastal Conservancy, and other local sponsors, as necessary, in order to facilitate the placement of dredged material at beneficial reuse sites.

Management and Monitoring of in-Bay Disposal of Dredged Material

12. The USACE shall maintain administrative controls on disposal volumes at the in-Bay disposal sites so that target volumes in Table 2 of this Order are not exceeded. The USACE shall manage overall disposal volumes and disposal locations within each site to prevent build-up of dredged material at the sites.

13. The USACE shall provide technical reports regarding the impacts of the discharge on waters of the State, pursuant to Section 13267 of the California Water Code (CWC). In previous years, the USACE has participated in the Regional Monitoring Program for Trace Substances (RMP) through support of the United States Geological Survey (USGS) for study of suspended sediment processes in the San Francisco Estuary. Implementation or funding of the RMP study program or other Water Board-approved study will constitute fulfillment of this provision.

14. The USACE shall provide to Water Board staff quarterly reports, acceptable to the Executive Officer, summarizing dredging and disposal activities in the San Francisco Bay region. The reports are due on June 1 (covering January 1 - March 31), September 1 (covering April 1 - June 30), December 1 (covering July 1 - September 30), and March 1 (covering October 1 - December 31) of each year.

    The quarterly report shall contain the following information for each dredging project: name of project, dates dredged, volume of dredged and disposed ("in-situ" volume where available, otherwise "bin" volume), disposal site(s) used, and name of any affiliated dredging permit holders (permittees). In addition to the printed version of the Quarterly Report, the USACE shall provide a digital version of the relevant data to the Water Board staff to facilitate ongoing evaluation of the impacts of dredging and dredged material disposal.

    At any time, the USACE may submit a request in writing to the Executive Officer to discontinue submitting quarterly reports if it can demonstrate that the data listed above is immediately accessible to Water Board staff in electronic format via the web-based DMMO data management system (database) discussed in Finding 20. The USACE may discontinue submitting the reports upon receiving the Executive Officer's written approval.

15. The USACE shall continue bathymetric monitoring of the in-Bay disposal sites (monthly surveys at the Alcatraz Disposal site, quarterly surveys elsewhere). The USACE shall keep a record of these surveys on file and shall make them available for inspection by the Water Board, other regulatory agencies, and interested members of the public upon written request to the USACE staff.

16. No later than July 1 of each year, the USACE shall submit to the Water Board an annual report acceptable to the Executive Officer (the Alcatraz Trend Study) analyzing the status of the mound at the Alcatraz Disposal site. This report shall include:

    a. A description of results of previous year's bathymetric surveys and a description of trends in mound shape and size;

    b. An estimate of the annual net change in volume of the mound overall, and at depths above -60, -50, -40, and -30 feet Mean lower Low Water;

    c. An estimate of the annual volume of dredged material disposal at the site;

    d. An analysis of the relationship between disposal volumes, site management practices, and net change in mound volume;

    e. Assessment of whether management practices are achieving satisfactory results; and

    f. Recommendations for future site management practices, as informed by the analysis and assessment items d and e, above.

Standard Provisions

17. The discharge of dredged materials to the waters of the State shall cease immediately whenever violations of this Order are detected by the USACE or by Board staff as determined by the Executive Officer, and the discharge shall not resume until compliance can be assured to the Executive Officer's satisfaction.

18. The USACE shall permit the Water Board or its authorized representative in accordance with California Water Code Section 13267(c) as follows:

    a. Entry upon premises in which any required records are kept.

    b. Access to copy any records required to be kept under terms and conditions of this order.

    c. Inspection of monitoring equipment or records.

    d. Sampling of any discharge.

    e. Provide small craft transport to offshore locations or vessels for the purpose of inspection, provided that it is within normal business hours.

19. This Order supersedes Order No. R2-2003-0111. Order R2-2003-0111 is hereby rescinded.

I, Bruce H. Wolfe, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on March 14, 2007.

BRUCE H. WOLFE
EXECUTIVE OFFICER

ATTACHMENTS:

Figure 1. General locations of USACE maintenance dredging projects

Figure 2. Dredged material disposal sites in the San Francisco Bay area planned for use for disposal of USACE 2007-2009 maintenance dredging sediments

Figure 3. Traditional herring spawning areas in Central San Francisco Bay

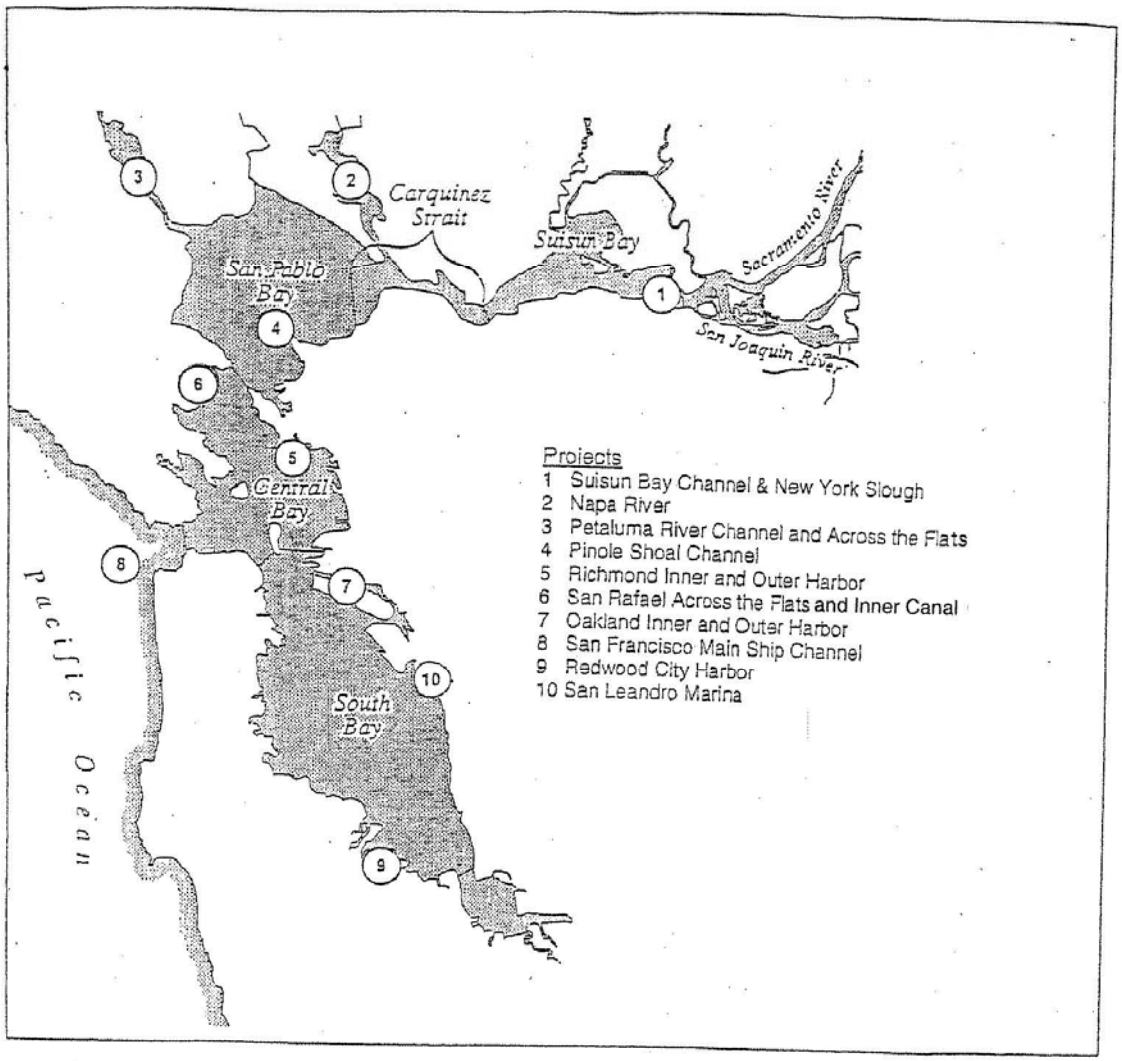

Figure 1 General locations of USACE maintenance dredging projects.

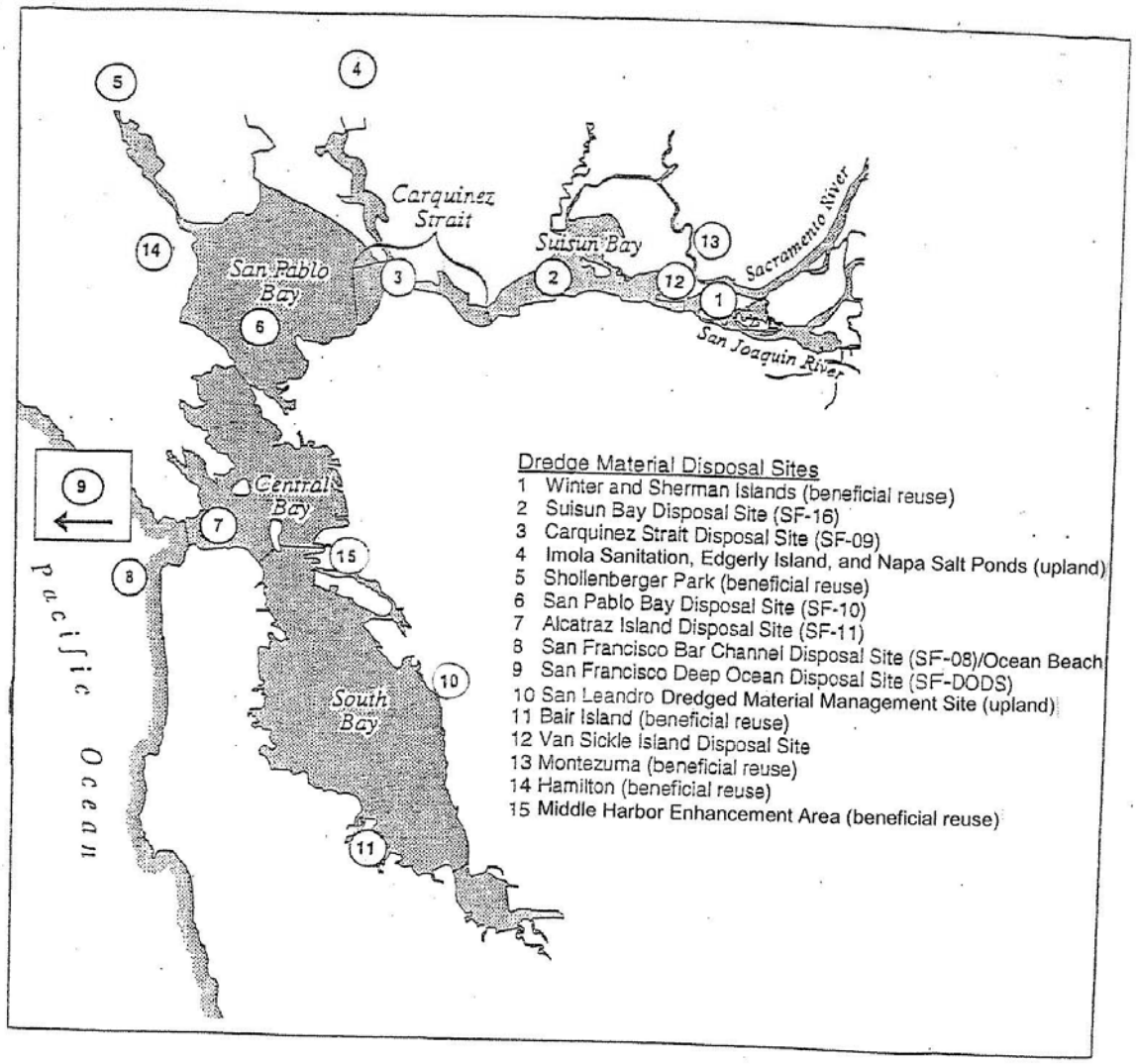

Figure 2 Dredged material disposal sites in the San Francisco Bay area planned, or in consideration, for use for disposal of Federal maintenance dredging sediments.

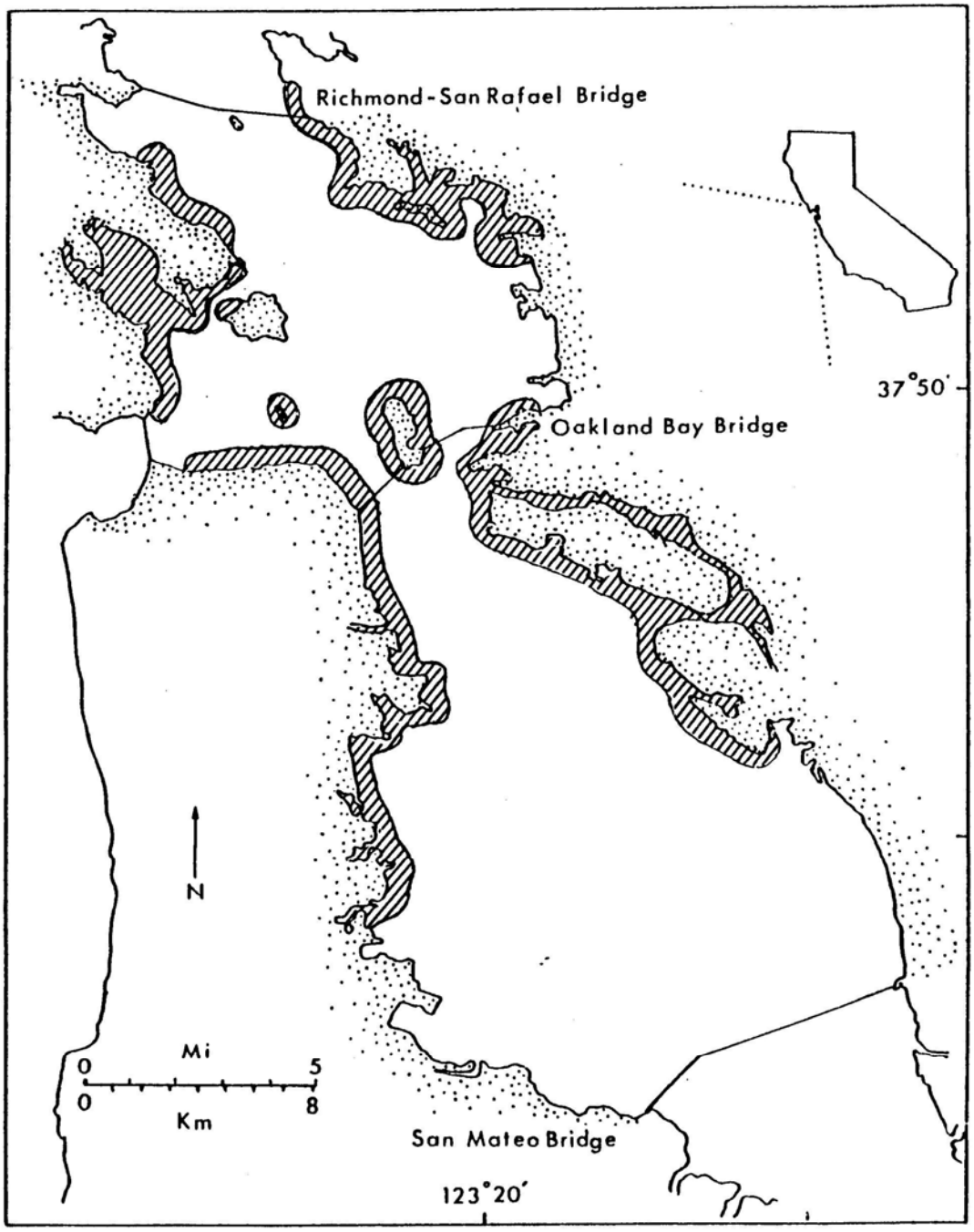

Figure 3. Traditional herring spawning areas in Central San Francisco Bay

Hatched areas are those areas for which permission from the California Department of Fish and Game must be obtained for any dredging between the December 1 and March 1 of any year.